Emission Inventory Improvement Program
EIIP-Phase 2

Future Directions for the Millennium

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Preface

Many individuals and organizations have contributed to the success of the Emission Inventory Improvement Program (EIIP). The willingness to volunteer time and knowledge has carried over into the planning of EIIP-Phase 2. The new directions for EIIP presented in this document are the result of the following individuals contributing their expertise for the good of the emission inventory community:

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Executive Summary

Since its inception in 1993[1], the EIIP has been successful in producing a series of comprehensive emissions inventory guidance documents essential to the development of high quality inventories. High quality emission inventories provide the foundation for many air quality management programs, such as State Implementation Plan (SIP) development, permits, modeling, and enforcement. The Standing Air Emissions Workgroup (SAEWG) believes that there are additional inventory needs that must be addressed to be able to successfully develop toxic control strategies and meet the implementation demands of the new air quality standards for PM/Haze and 8-hour Ozone.

These additional needs reflect the consensus of state and local emission inventory experts assembled from across the Country who attended a 2-day workshop in Raleigh, NC during August of 1999. This group of technical experts identified areas requiring development of new technical tools they believe will be essential for successful implementation of the new air quality initiatives which are summarized in Table 1.

EIIP has been very successful in leveraging both funding and personnel involvement from State and local agencies, federal agencies, and industry. This effort has produced a collection of work that would not have been possible had it been attempted by any single group. There is every reason to believe that extending EIIP will continue to result in high quality products at very reasonable costs. It is only because of the EIIP effort that many of the documents currently being used by State and local agencies to develop emission estimates exist. The proposed Phase 2 of EIIP, described in this document, moves the program into new areas. State and local agencies will face unique challenges during the next several years. EIIP Phase 2 will provide these agencies with the tools necessary to meet new demands.

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[1] The EIIP was established in 1993 by the joint State-Local and U.S. EPA Standing Air Emissions Work Group (SAEWG) to promote developing and using standard procedures for collecting, calculating, storing, reporting, and sharing emission inventory data.

Table 1. EIIP High Priority Projects

Toxics

- Publish toxics emission estimation guidance documents for point, area and mobile sources

Particulate Matter

- Develop guidance documents for preparing PM inventories
- Develop an algorithm for determining the transportable fraction of PM fine to reconcile emissions data with ambient monitoring data
- Develop guidance documents for preparing haze inventories

Training

- Conduct annual emission inventory workshop for exchange of technical information and staff training
- Establish Implementation Task Force to evaluate need for benchmarking, mentoring and development/coordination of formalized training programs

Mobile Sources

- Conduct top-down evaluation of MOBILE emissions model using ambient monitoring data
- Solicit EPA Office of Mobile Sources participation in EIIP to enhance interaction with state and local agencies when developing mobile source emission estimation tools

Modeling Profiles

- Develop/improved temporal, spatial, and speciation profiles for emissions modeling to increase confidence in air quality modeling results

Projections

- Improve current projection methodology to provide for more reliable emission projection forecasts

Area Sources

- Develop criteria for establishing when surveys are needed to collect area and nonroad source activity data
- Update area and nonroad source emission factors

Biogenics

- Update guidance to reflect the new BEIS3 model

Data Management

- Develop data transfer protocols
- Complete development of process classification code system essential for new data management systems

Quality Assurance

- Promote integration of emission inventories to resolve criteria and toxic pollutant source differences
- Develop a default source categorization system to allow more valid emission comparisons between inventories

I. Introduction

The Emission Inventory Improvement Program (EIIP) was established in 1993 to promote developing and using standard procedures for collecting, calculating, storing, reporting, and sharing air emissions data. The EIIP has risen to the challenge, producing a series of widely used emission inventory (EI) guidance documents, establishing data management and quality assurance/quality control (QA/QC) programs, providing training, and serving as a forum to enhance communication among the members of the inventory community.

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To continue addressing the evolving needs of the inventory community, the EIIP must carefully evaluate its progress to date and consider its future directions:

- EIIP has focused its efforts on collecting existing information and preparing guidance documents. What other efforts can the program undertake to serve the inventory community?
- The EIIP organizational structure successfully responded to many of the major issues it was established to address. Should the program be reorganized to better focus future efforts?
- Priorities shift at local, state, and federal regulatory levels. How can EIIP maintain its responsiveness to ensure that it focuses on topics that are most important to inventory preparers?

The EIIP serves a useful and productive role in the inventory community. To ensure that it remains relevant and able to respond to changing priorities and new legislative requirements, the program participants and other interested individuals undertook a continuous improvement exercise. The effort consisted of assessing its past activities and evaluating how it can meet the inventory community's needs for the future. This document presents the results of that evaluation and proposes new directions for EIIP.

Section 2 presents a brief overview of the history and accomplishments of EIIP. Section 3 identifies needs of the inventory community and suggests technical areas in which the EIIP should focus its efforts in the next phase of the program. Section 4 summarizes the priorities of the redefined EIIP as recommended during the reevaluation process. A schedule for implementing the new program is proposed in Section 5.

II. History

The 1990 Amendments to the Clean Air Act increased the emphasis on the role of EI data in air quality management programs. In the early 1990s, the processes used to collect emissions data across the United States were inconsistent and frequently resulted in inventories based on data that were incomplete, inaccurate, or of unknown quality. Impending decisions required by the 1990 Amendments dictated that inventories be comprehensive and of high quality. However, much uncertainty surrounded the inventories and air quality managers were faced with making major rulings based on inadequate emissions data.

EIIP developed standard procedures for collecting, calculating, storing, and reporting emissions data that would meet state and local agency and EPA management needs.

The EIIP was established in response to concerns voiced by the joint Environmental Protection Agency (EPA)/State and Territorial Air Pollution Program Administrators (STAPPA)/Association of Local Air Pollution Control Officers (ALAPCO) Standing Air Emissions Work Group (SAEWG). SAEWG expressed concern that the procedures and guidance available in 1991 allowed too much variation in many phases of the data compilation process and requested that EPA design a program to develop and implement standard approaches to collecting and reporting emission data. The EPA and SAEWG responded to this need by proposing a cooperative effort between state and local agencies and EPA. All of the tasks were to be performed by working committees made up of state and local agency personnel, EPA staff, and industry representatives. The committees would oversee the work of contractors developing the various products. It was to be a program coordinated by EPA.

In 1993, STAPPA/ALAPCO adopted the proposal and agreed to provide funds to develop and implement the program. Eight committees were established, each chaired by one state or local agency representative and one EPA representative. Each committee consisted of individuals from industry, state and local agencies, and EPA. Committees focused on issues particular to one topic (e.g., QA/QC) or one group of emission sources (e.g., point sources) and developed a series of preferred and alternative procedures to estimate emissions, or evaluate and manage emissions data. The original eight committees were:

- Steering Committee
- Point Sources Committee
- Area Sources Committee
- Mobile Sources Committee
- Biogenic Sources Committee
- Quality Assurance Committee
- Data Management Committee
- Governmental Interactions Committee

Three additional committees and one subcommittee were added later in 1998 in response to specific inventory needs:

- Greenhouse Gas Committee
- PM-2.5 Committee
- Projections Committee
- Source Classification Code Subcommittee of the Data Management Committee

The overall goal of the EIIP, as conceived in 1993, was to provide cost-effective, reliable inventories by improving the quality of collected emissions data and by providing for uniform reporting of this information. The intent of the EIIP was to develop a systematic mechanism for compiling emission inventories and to reduce uncertainty in emissions data. To support this goal, EIIP developed standard procedures for collecting, calculating, storing, and reporting emissions data that would meet state and local agency and EPA management needs. The EIIP focused on collecting existing information and preparing guidance materials. The specific original objectives of EIIP are depicted in Figure 1.

To meet these objectives, EIIP has produced over 3500 pages of guidance material. This information is available on CD-ROM, the EIIP World Wide Web page, and in hard copy format. The guidance documents prepared by the EIIP committees are widely accepted by the inventory community and have been identified by the Office of Air Quality Planning and Standards (OAQPS) as the preferred inventory guidance. A complete list of the guidance documents produced by EIIP is presented in Appendix A.

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The EIIP has conducted a series of outreach efforts to educate the inventory community about the concepts and philosophies on which the program is based. These outreach efforts were directed toward state and local agency personnel so they would be aware of the guidance documents available from EIIP.

The EIIP has made it a priority to continually solicit input and assistance from the users of the its products. Examples of the efforts to foster communication with the inventory community include:

- The EIIP "Road Show" meetings where training and program updates are presented to state and local air agency and EPA Regional Office personnel.
- Representatives of the EIIP regularly attend, present papers, and exhibit EIIP products at scientific meetings, such as Air & Waste Management Association (AWMA) conferences.

Figure 1

Specific Original Objectives of EIIP Were to:

- Develop a coordinated system of data measurement/calculation methods as a guide for estimating current and future emissions for particular source categories.
- Develop consistent QA/QC procedures applicable to all inventory programs.
- Improve the EPA/state/local system of data collection and reporting.
- Develop consistent EI preparation guidance and software packages for all affected pollutants.
- Develop an integrated source data reporting procedure that consolidates the many current reporting requirements.

- The EIIP periodic newsletter, the *EIIP Update*, which is sent to state and local agency air directors, state and local agency inventory preparers, and others in the inventory community.
- The EIIP World Wide Web site (http:/www.epa.gov/ttn/chief/eiip/). This site contains finalized EIIP documents, drafts of documents posted for comment by the inventory community, and a Public Forum where inventory preparers can ask questions and discuss issues.

The EIIP has produced an unanticipated benefit. The committee process adopted by the EIIP, involving industry representatives and state, local, and federal air pollution control agency personnel, has resulted in the free and open exchange of information and ideas. This dialogue has had a tremendous positive impact on the level of detail and quality of the EIIP documents. In addition, lines of communication among the participating groups have greatly improved, increasing interaction among all involved with estimating emissions. The communication process used by EIIP has been successful because all parties participate equally, both providing and receiving information.

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III. EIIP-Phase 2

Why Should EIIP-Phase 2 Be Started?

Because EIIP has been operating since 1993, working committee and steering committee members decided it was time to pause and evaluate the program, determine whether the products were meeting end-users' needs, and determine if other aspects of the emission inventory process needed attention. The EIIP Steering Committee needed this type of information to decide if the program should continue.

Both state and local agencies and EPA are in agreement that EIIP is worthwhile and should continue.

EIIP asked STAPPA/ALAPCO to conduct a survey of its members to determine their view of EIIP, its value to the inventory community, its success in meeting the community needs, and the areas that were in need of attention. A total of 41 organizations responded to the survey. The overwhelming opinion expressed was that EIIP was a valuable tool for state and local agencies, that it was meeting some of their needs, and that there were areas not presently being addressed by EIIP that needed attention. A major concern identified in the questionnaire was the source of funding to continue the program.

EIIP also sought EPA's opinion about the program. The position of EPA is that the program has been very beneficial. It has made the tools available to standardize the inventory process and is succeeding in developing the basis for simpler data exchange. Both of these achievements are very important to the Agency. If data are collected in a consistent manner and are submitted as scheduled, the Agency can meet its congressionally and court-mandated deadlines. EPA also raised the issue of funding.

Except for the issue of who should fund the program, both state and local agencies and EPA are in agreement that the program is worthwhile and should continue. The Steering Committee received this input and has proceeded to examine the current program, take the recommendations from the STAPPA/ALAPCO survey, and consult with outside inventory experts. The EIIP-Phase 2 plan that follows is a result of these activities.

EIIP-Phase 2 Plan

The need for high-quality emission inventories will continue. State and local agencies require emissions data to be able to establish air quality control strategies for ozone, particulate matter, toxics, and other air pollutants. There is a growing need for consistent data in multistate regions to facilitate analysis of problems such as regional haze and long-range transport. State and local agencies require consistent, high-quality data to be able to formulate equitable policies that address these interregional issues.

The goal of EIIP is to complement EPA's EI development work by focusing state and local resources and obtaining private-sector support to meet specific state and local agency EI needs.

The nonfederal community depends on EPA to maintain a strong emissions inventory program. Resource restrictions limit the extent to which EPA can meet all current needs. To overcome the lack of some tools required to generate emissions data, state and local agencies can meet a portion of their immediate needs by using EIIP-developed products. EIIP can assist the entire inventory community by employing its funds to supplement the activities of EPA.

The goal of EIIP is to complement EPA's EI development work by focusing state and local resources and obtaining private-sector support to meet specific state and local agency EI needs. To accomplish this goal, current EIIP objectives are to:

- ♦ Support specific projects designed to improve quality of EI data and tools;
- ♦ Improve expertise of inventory preparers (state and local agency personnel, industry) and raise the understanding level of emission data users including government decision makers in local, state, and federal agencies, nongovernment organizations, and the general public;
- ♦ Improve ready access to emissions information through uniform reporting, common data storage, and transfer techniques;
- ♦ Maintain communications with individuals and groups that compile and use inventory data such as:
  - Government and industry EI preparers
  - Permit writers
  - Trading program administrators
  - Economists
  - Modelers
  - Rule developers
  - Enforcement and compliance staff
  - Academics
  - Researchers
  - Industry and trade groups
- ♦ Coordinate activities with other organizations using or preparing inventories including:
  - Government agencies
  - Regional organizations (e.g., Mid-Atlantic Regional Air Management Association, MARAMA; Western States Air Resources Council, WESTAR)
  - Business and university groups

Potential activities identified can be broken into three major categories: products, training and outreach, and institutional. Each of these is discussed below, with specific ideas listed.

I. Products

Products consist of tools that can be used by the inventory preparer to actually collect, compile, calculate, and report emission estimates. The product list includes traditional EIIP outputs such as guidance documents (techniques development) and can be expanded into other areas that have received inadequate attention in the past. The major product areas as well as candidate product areas appear in Table 1.

II. Training and Outreach

The emphasis of this part of EIIP-Phase 2 is to identify training needs and note areas where training activities of various groups can been coordinated. EIIP will supplement the formal training programs with a means for more informal mentoring and coaching. Candidate activities to be included in the program include:

EIIP will supplement the formal training programs with a means for more informal mentoring and coaching.

- ♦ Provide guidance to EPA, STAPPA/ALAPCO, and AWMA on needed EI training
- ♦ Sponsor annual technical EI issues workshop
- ♦ Facilitate agency benchmarking (funds for agencies to visit each other)
- ♦ Facilitate mentoring program (one-on-one counseling)
- ♦ Act as a clearinghouse to gather and disseminate information about new ideas and new or emerging issues
- ♦ Communicate availability of all EIIP products

III. Institutional

The inventory community recognizes that, in addition to technical limitations, some institutional issues prevent smooth collection and reporting of emissions data. Issues identified in this plan highlight the need for a concentrated effort to remove these impediments. Since most of the problems arise within the various state, local, and federal organizations, the EIIP will identify and raise these concerns to the appropriate management level for resolution. Some areas to address include:

Institutional impediments can inhibit the smooth collection and reporting of emissions data. The EIIP will work to identify these concerns and elevate them to the appropriate management level for resolution.

- ♦ Continually assess EI needs of the scientific and regulatory community
  - Work with multistate organizations to determine needs of member states
  - EIIP to determine needs for special projects
  - Sponsor or cosponsor speciality workshops and conferences (e.g., for EI preparers, emission modelers)

Table 2. Major Product Areas

Techniques Development	Develop New Emission Factors	Develop Activity Indicators (Surrogates)	Tools	Impacts of Control Equipment on Emission Estimates	Produce Specific Inventories[a]	Data Reporting/ Transfer
• Point sources • Area sources • Mobile sources - Onroad - Offroad • PM - PM-2.5 - Other related PM emissions • NH_3 • Toxics • CO_2 • Biogenic sources • Projection procedures	• PM-2.5 • NH_3 • Other PM-related sources	• NH_3 • Other PM-related sources • Projections	• Speciation profiles • Temporal profiles • Spatial surrogates • Projection techniques • Quality assessment techniques (performance evaluations) • Emissions models • Size distribution profiles • Process category code system	• Control device efficiences • Process upsets • Malfunctions • Co-control • Rule penetration/rule effectiveness	• Area source VOCs • Toxics • NH_3 • PM-2.5 precursors	• Review and update EIIP data model as needed • Develop alternative data exchange protocol(s) based on EIIP data model

[a] Specific inventories would be produced using previously developed EIIP products.

- ♦ Encourage needed change within organizations to:
  - Improve interaction between different groups within state and local agencies collecting and using/reporting EI data
  - Improve coordination between EPA groups issuing EI guidance (OAQPS and Office of Mobile Sources, OMS)
  - Improve coordination between regional organizations
  - Improve interaction between top-down (national) and bottom-up (local) inventories
- ♦ Encourage managers and decision makers to incorporate best quality practices into all EI activities
  - Raise awareness and commitment level of managers and decision makers related to the importance of quality EI data
  - Promote program of continuous improvement in all EI activities
    - Benchmarking
    - Progress tracking
- ♦ Promote consensus building by state/local/federal agencies, industry, and the public sector in developing emission inventories (e.g., common formats)

IV. Priority Programs

The planning horizon for Phase 2 contains two 3-year periods. At the end of the first 3 years, program participants will again do a reassessment, examine current projects and priorities, and modify as appropriate. High-priority projects not begun in FY2000 will be phased in during succeeding years as time and resources permit.

During Phase 1 of EIIP, the emphasis was placed on developing uniform emission-estimating guidance documents. This created a homogeneous and easily understood program. Phase 2 will focus on project-oriented products, shown in Table 2; an example would be producing a speciation profile to meet a specific need. As a result, the projects shown in Table 2 may appear unrelated and with no apparent focus. Over the last several years, the inventory community has improved its ability to estimate emissions. However, significant gaps still exist in available tools. Projects for Phase 2 have been selected to meet identified needs of the inventory community. The focus of EIIP-Phase 2 will address deficiencies recognized by the inventory producers and users and will develop products that increase the accuracy or the coverage of emission estimates. The projects may not appear to be related but will address known weaknesses in the inventory compilation process.

The projects listed in Table 2 were developed during a meeting of state and local agency and EPA inventory experts from around the country. They based their recommendations on the Steering Committee's major topic suggestions

discussed at the end of Section III of this report including the product areas shown in Table 2. Developing specific tools to improve the accuracy of emission estimates was emphasized.

Projects are listed under the eight main topic areas identified by the Steering Committee, with two more topic headings added, training and quality assurance. Many of the projects have associated training needs that will be treated as a single group rather than with each project. Quality assurance is a continuing concern and will be addressed at both the project and inventory level.

The EIIP Steering Committee believes that certain aspects of producing emission estimation tools are the responsibility of EPA. Some high-priority projects appearing on the EIIP list are also planned or are now underway and being sponsored by EPA. EIIP projects will supplement these EPA efforts by adding features to the products that are not now planned by EPA or will shorten the time to complete the projects. This cofunding benefits state and local agencies by providing more complete estimation tools on a more rapid schedule than is possible by depending solely on EPA to sponsor the projects.

The high-priority projects recommended for funding during the first 3 years of EIIP-Phase 2 appear alphabetically by topic area in Table 2. No priority should be inferred by the order listed.

Other high-priority projects to be phased in over the next several years are identified in Table 3. If sufficient additional funds are made available, the activities listed in Table 3 will be initiated.

Table 3. EIIP-Phase 2 High-Priority Projects for the First 3 Years

Topic Area	High-Priority Project	Project Description
Area and Nonroad Sources	Area/Nonroad Activity Survey Criteria	Activity data determined by surveys are the most accurate and costly to collect. Agencies need a set of criteria to guide them in deciding when more accurate survey data are needed and when surrogate activity can be used. An EIIP group would develop criteria to use in deciding when a survey to determine activity data is needed.
	Update Area/Nonroad Source Emission Factors	Current emission factors for selected source categories may have become outdated due to process changes and introduction of new technology. Current factors would be reviewed and updated as necessary to reflect present processes.
Biogenics	Update the Guidance for BEIS	During EIIP Phase 1, EIIP developed guidance for the Biogenic Emissions Inventory System Version 2 Model (BEIS2). This new document would update current EIIP guidance on BEIS to reflect changes in BEIS3.
Data Management and Transfer	Develop or Identify Data Transfer Protocols	This review would evaluate the National Emission Trends (NET) inventory data input format for use as a standard data transfer protocol. Recommendations for updates or a new protocol would be developed. An immediate need for this project was perceived because of the anticipated increase in regional approaches to developing air quality strategies.
	Process Classification Code (PCC) Project	This project began under EIIP Phase 1 and its completion is critical since new data systems are now under development within state and local agencies. Consideration of PCCs in the design phase of new data systems is essential to timely implementation of the new codification system to replace Source Classification Codes (SCCs).

Table 3. EIIP-Phase 2 High-Priority Projects for the First 3 Years (Continued)

Topic Area	High-Priority Project	Project Description
Mobile Sources	Top-down Validation of MOBILE Model Emissions	This project would improve the certainty of MOBILE emission estimates for criteria pollutants from onroad vehicles. The project would compare ambient monitoring data from Photochemical Assessment Monitoring Stations (PAMS) sites to air pollutant concentrations predicted using MOBILE model emission inputs to an ozone air quality model. Study findings would be used to adjust outputs from the MOBILE model to address state and local agency concerns that the MOBILE model continues to underestimate base year emissions even after adjustments for cold starts and vehicle mix.
	Improve OMS Involvement in EIIP	This internal EIIP effort would open up a dialogue with EPA's OMS to investigate opportunities for information exchange with state and local agencies.
Modeling Profiles	Develop/Improve Temporal, Spatial, and Chemical Profiles	Profiles are needed for air quality and receptor modeling. This project would review, update, and develop new profiles as needed for ozone precursors, toxics, and PM.
Particulate Matter	Guidance for PM/Haze	Agencies require emission estimation guidance documents for PM/haze. New EIIP documents would be developed that include preferred and alternative methods for estimating particulate and precursor pollutants.
	Develop Algorithm for Determining the Transportable Fraction of PM Emissions	Current estimates of crustal material include the transportable fraction as well as material that settles out near the source. Current methods overestimate the contribution of crustal material to PM-2.5. This project would develop an algorithm to estimate the portion of crustal material available for transport.

Table 3. EIIP-Phase 2 High-Priority Projects for the First 3 Years (Continued)

Topic Area	High-Priority Project	Project Description
Projections	Evaluation of Projection Methods	This project would compare historical emission projections with observed data to evaluate the performance of projection methods and identify areas for improvement.
Quality Assurance	Integration of Inventories	This project would identify ways to increase the consistency of data and approaches used in developing criteria and toxics EI estimates. It would identify inventories where consistency is an issue, evaluate its causes, and recommend changes to inventory methodologies.
	Develop/Define Default Categorization Approach	Emission sources are grouped into categories in emission inventories and, lacking guidance in this area, categorization schemes have evolved along similar but not entirely consistent paths. This project would suggest a model for EI preparers to follow when developing future categorization schemes to allow comparisons of like emissions from different inventories.
Training	Annual Technical EI Workshop	Members of the EI community periodically need to meet and discuss technical information in a workshop atmosphere. Roundtable discussions of key issues, face-to-face training, bench marking, and mentoring would be conducted during the workshop. It would also provide a forum for reaching consensus on technical EI issues.
Toxics	Incorporate Toxic EI Methods into Current EIIP Documents	Current EIIP guidance documents would be updated to include toxic emission estimation methodology. To ensure a complete inventory and to reduce the reporting burden, EIIP methods would describe how to collect data for both toxic and criteria pollutants.

Table 4. Other EIIP-Phase 2 High-Priority Projects

Topic Area	High-Priority Project	Project Description
Area Sources	Supplement development of the Area Source Emission Model (ASEM)	Expand the capabilities of ASEM to include toxics, other criteria pollutants, and Geographic Information System (GIS) capability. ASEM is an EPA-developed emissions model designed to reduce resources necessary to estimate area source emissions for PM, other criteria pollutants, NH_3, and toxics.
Biogenics	Enhancements to the BEIS Model	Improvements are needed to improve the accuracy of biogenic emission estimates. This Phase 2 effort would support additions to the BEIS model to include the use of local activity data, estimating annual emissions, estimating statewide emissions, and estimating the uncertainty of model output.
Communications	Identify Ways to Improve Institutional Structure	The EIIP Steering Committee would seek to identify ways of improving communication among entities involved in developing emission estimates and inventories. A related exercise would involve improving decision-maker awareness of EI issues and impacts.
Particulate Matter	Develop a Clearinghouse for PM Research	There is much ongoing activity addressing PM issues. Having an organization that identifies these efforts can provide opportunities to develop collaborative programs among groups, prevent duplication, and provide a source of information for those needing estimating methods or emission factors. This project would develop a clearinghouse that provides information on PM research being conducted throughout the country.
	Develop Procedures for Estimating Organic Aerosol Emissions	Procedures are required to estimate organic emissions that are precursors to PM. A guidance document would be developed to assist state and local agencies in developing complete inventories needed for regional PM and haze programs.

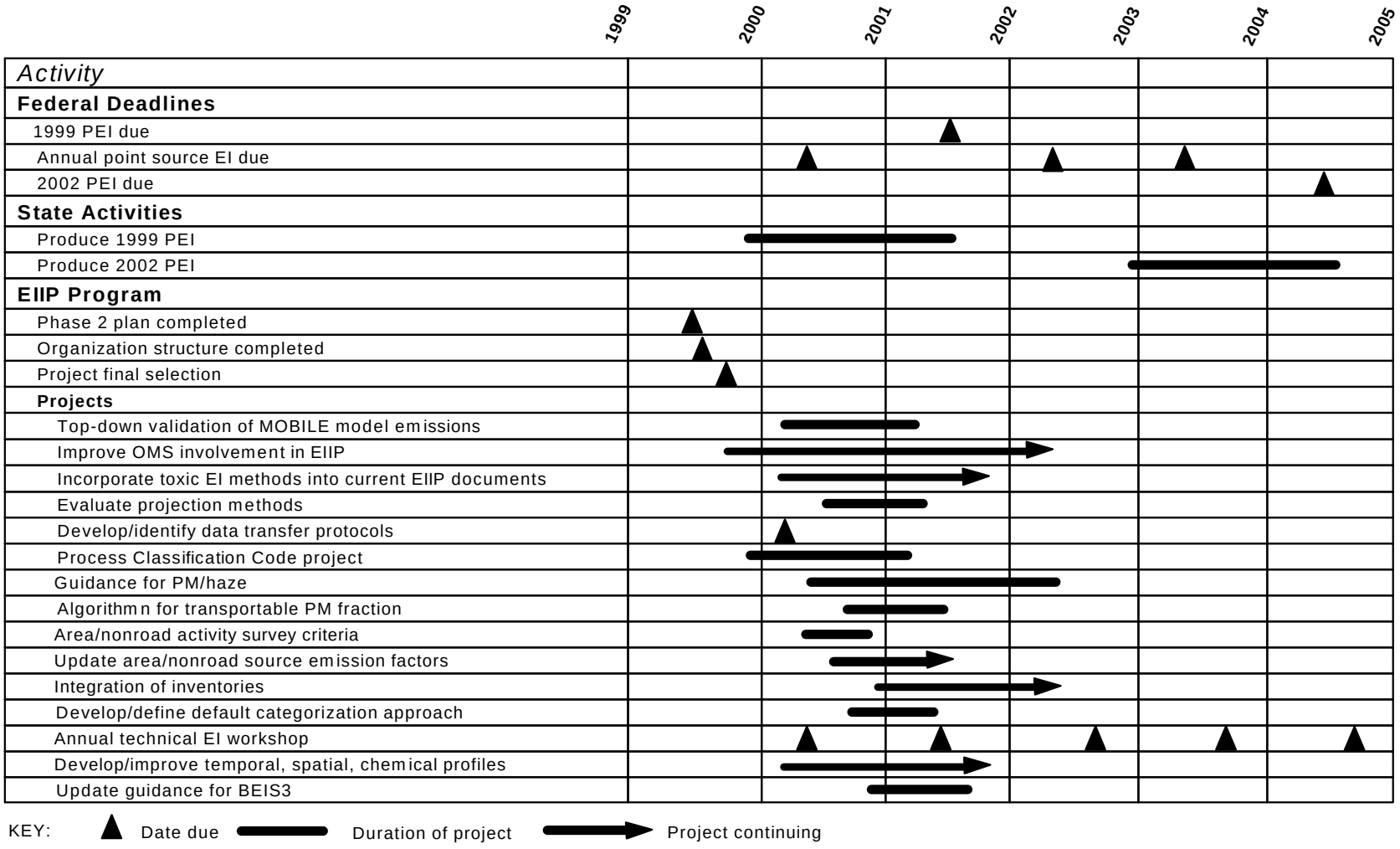
Table 4. Other EIIP-Phase 3 High-Priority Projects (Continued)

Topic Area	High-Priority Project	Project Description
Particulate Matter (Continued)	Develop an NH_3 Emissions Model	This effort would result in developing an area source ammonia emission model. The model would estimate NH_3 emissions, a precursor to PM-2.5 formation, and would be similar in concept to the BEIS model. It would allow users to calculate ammonia emissions from area and natural sources. This would be a more comprehensive effort than envisioned in the Ammonia Module of EPA's ASEM.
	Conceptual Design for Integration of GIS Capability in Emissions Modeling for PM-2.5 and Haze	This project would combine the capabilities of GIS spatial resolution with model needs for various resolutions. The product would help improve the accuracy of spatial allocation of PM-2.5 emissions and improve the accuracy of local modeling efforts.
	Develop PM-2.5 Emission Factors	Factors are needed to completely estimate PM-2.5 emissions from all applicable source categories. Emission factors for selected categories would be developed using existing data. Additional testing would be based on critical need and resources.
Rule Penetration/Rule Effectiveness	Develop Guidance on How to Apply RP and RE to New Rules	Guidance would be developed on how to apply Rule Penetration (RP) and Rule Effectiveness (RE) as new rules are promulgated.
Spatial Allocation	Develop Process to Evaluate and Improve Spatial Surrogates	This project would improve the national data set and guidance for spatial surrogate defaults by developing a mechanism for states and regions to suggest surrogates for inclusion in the national default data set.

Table 4. Other EIIP-Phase 3 High-Priority Projects (Continued)

Topic Area	High-Priority Project	Project Description
Training	Training and Coordination in Risk Methodology	Training of EI preparers in risk assessment methodology would be conducted to increase awareness of special needs when developing toxic pollutant emission inventories for support of risk assessment activities.

V. Schedule


1999
2000
2001
2002
2003
2004
2005
Activity
Federal Deadlines
1999 PEI due
Annual point source EI due
2002 PEI due
State Activities
Produce 1999 PEI
Produce 2002 PEI
EIIP Program
Phase 2 plan completed
Organization structure completed
Project final selection
Projects
Top-down validation of MOBILE model emissions
Improve OMS involvement in EIIP
Incorporate toxic EI methods into current EIIP documents
Evaluate projection methods
Develop/identify data transfer protocols
Process Classification Code project
Guidance for PM/haze
Algorithm for transportable PM fraction
Area/nonroad activity survey criteria
Update area/nonroad source emission factors
Integration of inventories
Develop/define default categorization approach
Annual technical EI workshop
Develop/improve temporal, spatial, chemical profiles
Update guidance for BEIS3
KEY:
Date due
Duration of project
Project continuing

APPENDIX A

LIST OF AVAILABLE EIIP DOCUMENTS
http:/www.epa.gov/ttn/chief/eiip/

Introduction to the EIIP

Volume I of the EIIP Series:

Introduction and Use of EIIP Guidance for Emissions Inventory Development

Point Sources Committee

Volume II of the EIIP Series:

Chapter 1: Introduction to Stationary Point Source Emission Inventory Development

Chapter 2: Preferred and Alternative Methods for Estimating Air Emissions from Boilers

Chapter 3: Preferred and Alternative Methods for Estimating Air Emissions from Hot-Mix Asphalt Plants

Chapter 4: Preferred and Alternative Methods for Estimating Air Emissions from Equipment Leaks

Chapter 5: Preferred and Alternative Methods for Estimating Air Emissions from Wastewater Collection and Treatment Facilities

Chapter 6: Preferred and Alternative Methods for Estimating Air Emissions from Semiconductor Manufacturing

Chapter 7: Preferred and Alternative Methods for Estimating Air Emissions from Surface Coating Operations

Chapter 8: Preferred and Alternative Methods for Estimating Air Emissions from Paint and Ink Manufacturing

Chapter 9: Preferred and Alternative Methods for Estimating Air Emissions from Secondary Metal Processing

Chapter 10: Preferred and Alternative Methods for Estimating Air Emissions from Oil and Gas Field Production and Processing Operations

Chapter 11: Preferred and Alternative Methods for Estimating Air Emissions from Plastic Products Manufacturing

Chapter 12: *How to Incorporate the Effects of Air Pollution Control Device Efficiencies and Malfunctions into Emissions Inventory Estimates (on hold)*

Chapter 13: Technical Assessment Paper: Available Information for Estimating Air Emissions from Stone Mining and Quarrying Operations

Other Point Source Committee Documents:

Emission Inventories and Proper Use of Rule Effectiveness (**draft**)

Area Sources Committee

Volume III of the EIIP Series:

Chapter 1: Introduction to Area Source Emission Inventory Development

Chapter 2: Preferred and Alternative Methods for Estimating Air Emissions from Residential Wood Combustion

Chapter 3: Preferred and Alternative Methods for Estimating Air Emissions from Architectural Surface Coating

Chapter 4: Preferred and Alternative Methods for Estimating Air Emissions from Dry Cleaning

Chapter 5: Preferred and Alternative Methods for Estimating Air Emissions from Consumer and Commercial Solvent Use

Chapter 6: Preferred and Alternative Methods for Estimating Air Emissions from Solvent Cleaning

Chapter 7: Preferred and Alternative Methods for Estimating Air Emissions from Graphic Arts

Chapter 8: Preferred and Alternative Methods for Estimating Air Emissions from Industrial Surface Coating

Chapter 9: Preferred and Alternative Methods for Estimating Air Emissions from Pesticides - Agricultural and Nonagricultural

Chapter 10: *Preferred and Alternative Methods for Estimating Air Emissions from Agricultural Operations - on hold*

Chapter 11: Preferred and Alternative Methods for Estimating Air Emissions from Gasoline Marketing

Chapter 12: Preferred and Alternative Methods for Estimating Air Emissions from Marine Vessel Loading, Ballasting and Transit

Chapter 13: Preferred and Alternative Methods for Estimating Air Emissions from Autobody Refinishing **(draft)**

Chapter 14: Preferred and Alternative Methods for Estimating Air Emissions from Traffic Paints

Chapter 15: Preferred and Alternative Methods for Estimating Air Emissions from Municipal Landfills

Chapter 16: Preferred and Alternative Methods for Estimating Air Emissions from Open Burning

Chapter 17: Preferred and Alternative Methods for Estimating Air Emissions from Asphalt Paving

Chapter 18: Preferred and Alternative Methods for Estimating Air Emissions from Structure Fires

Chapter 19: *Preferred and Alternative Methods for Estimating Air Emissions from Agricultural Burning - on hold*

Chapter 20: *Preferred and Alternative Methods for Estimating Air Emissions from Prescribed Burning - on hold*

Chapter 21: *Preferred and Alternative Methods for Estimating Air Emissions from Wildfires - on hold*

Chapter 22: *Preferred and Alternative Methods for Estimating Air Emissions from Unpaved Road Fugitive Dust - on hold*

Chapter 23: *Preferred and Alternative Methods for Estimating Air Emissions from Livestock Operations Ammonia - on hold*

Category Method Abstracts

Asphalt Roof Kettles - on hold

Commercial/Retail Bakeries

Residential and Commercial/Institutional Fuel Oil and Kerosene Combustion

Residential and Commercial/Institutional Coal Combustion

Residential and Commercial/Institutional Natural Gas and Liquified Petroleum Gas (LPG) Combustion

Leaking Underground Storage Tanks - on hold

Vehicle Fires

Frequently Asked Questions (and Answers) - on EIIP World Wide Web site

Mobile Sources Committee

Volume IV of the EIIP Series:

Chapter 1: Preferred and Alternative Methods for Gathering and Locating Specific Emission Inventory Data

Chapter 2: Use of Locality-Specific Transportation Data for the Development of Mobile Source Emission Inventories

Chapter 3: Guidance for Estimating Lawn and Garden Equipment Activity Levels

Biogenic Sources Committee

Volume V of the EIIP Series:

Biogenic Sources Preferred Methods

Quality Assurance Procedures Committee

Volume VI of the EIIP Series:

Chapter 1: Introduction: The Value of QA/QC

Chapter 2: Planning and Documentation

Chapter 3: General QA/QC Methods

Chapter 4: Evaluating the Uncertainty of Emission Estimates

Chapter 5: Model QA Plan

Chapter 6: Emissions Verification and Validation (**draft**)

Appendix A: Example Audit Report

Appendix B: Technical Systems Audit Checklist Example

Appendix C: Example 1 of Data Quality Audit Checklist

Appendix D: Example 2 of Data Quality Audit Checklist

Appendix E: Performance Evaluation Checklist Example

Appendix F: EIIP Recommended Approach to Using the Data Attribute Rating System (DARS)

DARS User Manual, Beta Version 1.1

DARS Software Beta Version 1.1

DARS Installation Readme File

Data Management Committee

Volume VII of the EIIP Series:

EIIP Phase I Data Model

Prototype Version EIIP EDI Implementation Guideline (for air emissions modeling data), Prototype Version

Prototype Demonstration for Data Transfer Method with Approach Study: Final Action Plan

Report Assessing the Procurement and Management of EDI Translators

Report on Maintenance Issues Associated with the EDI X12 Convention Document

Source Classification Code Subcommittee (Data Management Committee)

Suggested Classification Code System Goals

Data Elements Document

PM-2.5 Committee

Getting Started: Emissions Inventory Methods for PM-2.5

PM-2.5 Emission Inventory Resource Center Web site

Greenhouse Gas Committee

Draft Documents for Volume VIII in the EIIP Series:

Introduction to Estimating Greenhouse Gas Emissions.

Chapter 1: Methods for Estimating Greenhouse Gas Emissions from Combustion of Fossil Fuels

Chapter 2: Methods for Estimating Greenhouse Gas Emissions from Industrial Processes

Chapter 3: Methods for Estimating Methane Emissions from Natural Gas and Oil Systems

Chapter 4: Methods for Estimating Methane Emissions from Coal Mining

Chapter 5: Methods for Estimating Greenhouse Gas Emissions from Municipal Waste Disposal

Chapter 6: Methods for Estimating Methane Emissions from Domesticated Animals

Chapter 7: Methods for Estimating Greenhouse Gas Emissions from Manure Management

Chapter 8: Methods for Estimating Methane Emissions from Flooded Rice Fields

Chapter 9: Methods for Estimating Greenhouse Gas Emissions from Agricultural Soils

Chapter 10: Methods for Estimating Carbon Dioxide and Sinks from Emissions from Forest Management

Chapter 11: Methods for Estimating Greenhouse Gas Emissions from Burning of Agricultural Crop Wastes

Chapter 12: Methods for Estimating Greenhouse Gas Emissions from Municipal Waste Water

Chapter 13: Methods for Estimating Methane and Nitrous Oxide Emissions from Mobile Combustion

Chapter 14: Methods for Estimating Methane and Nitrous Oxide Emissions from Stationary Combustion

Projections Committee

Projection Methods Discussion Paper

Draft documents posted on the EIIP World Wide Web site for review:

Projections Overview Chapter

Point Source Emission Projections Chapter

Stationary Area Emission Projections Chapter

Nonroad Chapter